



**Australian
National
University**

Position Description

College/Division:	College of Science (CoS)
Faculty/School/Centre:	Research School of Physics (RSPHys)
Department/Unit:	Electronic Materials Engineering (EME)
Position Title:	Postdoctoral Fellow in GaAs-based laser devices
Classification:	Academic Level A
Position No:	TBC
Responsible to:	Professor, Electronic Materials Engineering
Number of positions that report to this role:	
Delegation(s) Assigned:	Prof. Hoe Tan

PURPOSE STATEMENT:

The Department of Electronic Materials Engineering (EME) is one of the nine departments within the Research School of Physics (RSPHys). RSPHys represents Australia's foremost university-based research activity in the physical sciences area, involving several hundred academics, graduate students and support staff. The school hosts a wide array of major multi-million dollar experimental facilities many serving a national research role.

We are seeking a Postdoctoral Fellow to conduct research in the field of GaAs-based laser design, fabrication and characterisation. The Department houses various optical characterisation facilities, such as micro-photoluminescence, time-resolved photoluminescence, Raman spectroscopy and cathodoluminescence. There are also facilities for the growth the semiconductor nanostructures and cleanroom fabrication facilities to fabricate optoelectronic devices (such as lasers, LEDs, solar cells and photodetectors) from these nanostructures.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

The Postdoctoral Fellow will conduct original research under the broad guidance of Prof. Tan, Dr. F. Karouta and Prof. C. Jagadish in the field III-V semiconductor lasers (as described in the Linkage Project). The Postdoctoral Fellow will work with a team of researchers and students to design, fabricate and characterise III-V semiconductor ridge waveguide lasers and will collaborate with other project partners (MogLabs and RMIT). In addition, there will be a requirement to maintain a good and comprehensive documentation of the simulation/fabrication/characterisation of the work.

Role Statement:

Under the broad direction of the Professor, Electronic Materials Engineering, the Postdoctoral Fellow will:

1. Undertake independent research in the field of semiconductor laser design, fabrication and characterisation, with a view to meeting milestones of the project, publishing original and innovative results in refereed journals, presenting research at academic seminars and at national and international conferences, and collaborating with other researchers at a national and/or international level
2. Collaborate with senior staff to actively seek and secure external funding, assist to prepare and submit research proposals to external funding bodies as appropriate.
3. Contribute to the teaching activities of the School at the undergraduate and graduate levels. This includes, but is not limited to, the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations, and with students or acting as subject coordinators.
4. Undertake work in semiconductor labs and clean rooms for the fabrication of laser devices which imply a full respect of the labs rules
5. Supervise students working on individual or group projects at undergraduate, honours, graduate-coursework levels. Assist with supervision of research students

6. Actively contribute to all aspects of the operation of the School
7. Assist in outreach activities including to prospective students, research institutes, industry, government, the media and the general public
8. Maintain high academic standards in all education, research and administrative endeavours
9. Take responsibility for their own workplace health and safety and not willfully place at risk the health and safety of another person in the workplace.
10. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.
11. Other duties as required that are consistent with the classification of the position.

Skill Base

A Level A academic will work with the support and guidance from more senior academic staff and is expected to develop their expertise in teaching and research with an increasing degree of autonomy. A Level A academic will normally have completed four years of tertiary study or equivalent qualifications and experience and may be required to hold a relevant higher degree.

A Level A academic will normally contribute to teaching at the institution, at a level appropriate to the skills and experience of the staff member, engage in scholarly, research and/or professional activities appropriate to their profession or discipline, and undertake administration primarily relating to their activities at the institution. The contribution to teaching of Level A academics will be primarily at undergraduate and graduate diploma level.

SELECTION CRITERIA:

1. A PhD (or awarding of a PhD within six months of appointment commencement) in Physics, Materials Science, Engineering or equivalent qualifications and experience in a related area, with a track record of independent research in the field of semiconductor materials and devices as evidenced by publications in peer-reviewed journals and presentations at conferences
2. Evidence of the ability to articulate and prosecute innovative research in the following fields:
 - Proven ability in the fabrication and characterization of III-V semiconductor ridge waveguide lasers;
 - Demonstrated ability to design semiconductor lasers
3. An ability and commitment to contribute to bids for competitive external funding to support individual and collaborative research activities.
4. Evidence of an ability and willingness to teach at all levels.
5. The ability to assist in the supervision of students working on research projects.
6. The ability to work as part of a team and to meet deadlines.
7. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary academic environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels.
8. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

Supervisor/Delegate Signature:		Date:	17-09-2019
Printed Name:	Prof. Hoe Tan	Uni ID:	u9302338

References:

[General Staff Classification Descriptors](#)

[Academic Minimum Standards](#)



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Pre-Employment Work Environment Report

Position Details

College/Div/Centre	College of Science	Dept/School/Section	RSPHys/EME
Position Title	Postdoctoral Fellow	Classification	Academic Level A
Position No.		Reference No.	

In accordance with the Occupational Health and Safety Act 1991 the University has a duty of care to provide a safe workplace for all staff.

- This form must be completed by the supervisor of the advertised position and forwarded with the job requisition to Appointments and Promotions Branch, Human Resources Division. Without this form jobs cannot be advertised.
- This form is used to advise potential applicants of work environment issues prior to application.
- Once an applicant has been selected for the position consideration should be given to their inclusion on the University's Health Surveillance Program where appropriate – see http://info.anu.edu.au/hr/OHS/_Health_Surveillance_Program/index.asp Enrolment on relevant OHS training courses should also be arranged – see http://info.anu.edu.au/hr/Training_and_Development/OHS_Training/index.asp
- 'Regular' hazards identified below must be listed as 'Essential' in the Selection Criteria - see 'Employment Medical Procedures' at http://info.anu.edu.au/Policies/_DHR/Procedures/Employment_Medical_Procedures.asp

Potential Hazards

<ul style="list-style-type: none"> Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a regular or occasional part of the duties. 					
TASK	regular	occasional	TASK	regular	occasional
key boarding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	laboratory work	<input checked="" type="checkbox"/>	<input type="checkbox"/>
lifting, manual handling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	work at heights	<input type="checkbox"/>	<input checked="" type="checkbox"/>
repetitive manual tasks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	work in confined spaces	<input type="checkbox"/>	<input checked="" type="checkbox"/>
catering / food preparation	<input type="checkbox"/>	<input type="checkbox"/>	noise / vibration	<input type="checkbox"/>	<input checked="" type="checkbox"/>
fieldwork & travel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	electricity	<input type="checkbox"/>	<input checked="" type="checkbox"/>
driving a vehicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
NON-IONIZING RADIATION			IONIZING RADIATION		
solar	<input type="checkbox"/>	<input checked="" type="checkbox"/>	gamma, x-rays	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ultraviolet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	beta particles	<input type="checkbox"/>	<input type="checkbox"/>
infra red	<input checked="" type="checkbox"/>	<input type="checkbox"/>	nuclear particles	<input type="checkbox"/>	<input type="checkbox"/>
laser	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
radio frequency	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
CHEMICALS			BIOLOGICAL MATERIALS		
hazardous substances	<input checked="" type="checkbox"/>	<input type="checkbox"/>	microbiological materials	<input type="checkbox"/>	<input type="checkbox"/>
allergens	<input type="checkbox"/>	<input type="checkbox"/>	potential biological allergens	<input type="checkbox"/>	<input type="checkbox"/>
cytotoxics	<input type="checkbox"/>	<input type="checkbox"/>	laboratory animals or insects	<input type="checkbox"/>	<input type="checkbox"/>
mutagens/teratogens/	<input type="checkbox"/>	<input type="checkbox"/>	clinical specimens, including blood	<input type="checkbox"/>	<input type="checkbox"/>
carcinogens					
pesticides / herbicides	<input type="checkbox"/>	<input type="checkbox"/>	genetically-manipulated specimens	<input type="checkbox"/>	<input type="checkbox"/>
			immunisations	<input type="checkbox"/>	<input type="checkbox"/>
OTHER POTENTIAL HAZARDS (please specify):					

Supervisor's Signature:		Print Name:	Prof. Hoe Tan	Date:	17-09-2019
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